

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently amended): A method for producing a mechanical part,  
comprising:

sizing a sintered metal unit; and

grinding the sized metal unit;

wherein

a lubricating oil is applied to the sintered metal unit during sizing, and

the lubricating oil ~~composition for sizing, comprising~~ comprises:

(A) a lubricating base oil having a kinematic viscosity of 0.5 to 150 mm<sup>2</sup>/s at 40°C,  
and

(B) ~~as an extreme pressure and rust preventing agent,~~ a high basic Ca sulfonate  
~~compounded therein~~ in an amount of 5 to 80 % by mass based on a total amount of ~~said the~~  
lubricating oil composition.

Claim 2 (Currently amended): The method for producing a mechanical part according  
to claim 1, wherein The the lubricating oil ~~composition for applied during~~ sizing as defined  
in claim 1, further comprising (C) as a rust preventing agent, comprises at least one selected  
from the group consisting of a neutral Ba sulfonate, and/or a fatty acid ester of a polyhydric  
alcohol and a mixture thereof compounded therein in an amount of 0.5 to 30 % by mass  
based on ~~[[a]] the~~ total amount of ~~said the~~ lubricating oil composition.

Claim 3 (Currently amended): The method for producing a mechanical part according  
to claim 1, wherein The the lubricating oil ~~composition for applied during~~ sizing as defined  
in claim 1, further comprising (D) as a metal deactivator, comprises at least one selected

from the group consisting of a benzotriazole compound, and/or a thiadiazole compound compounded therein and a mixture thereof in an amount of 0.005 to 10 % by mass based on ~~[[a]]~~ the total amount of said composition the lubricating oil.

Claim 4 (Currently amended): The method for producing a mechanical part according to claim 1, wherein The the lubricating oil composition for applied during sizing as defined in claim 1, further comprising (E) comprises an anti-oxidizing agent compounded therein in an amount of 0.05 to 10 % by mass based on ~~[[a]]~~ the total amount of said composition the lubricating oil.

Claim 5 (New): The method for producing a mechanical part according to claim 1, wherein the lubricating base oil is at least one selected from a group consisting of a mineral oil, a synthetic oil and a mixture thereof.

Claim 6 (New): The method for producing a mechanical part according to claim 5, wherein the lubricating base oil is at least one mineral oil selected from the group consisting of a distillate oil obtained by atmospheric distillation of a paraffin base crude oil, an intermediate base crude oil or a naphthene base crude oil, a distillate oil obtained by vacuum distillation of a residual oil of an atmospheric distillation, and a refined oil selected from the group consisting of a solvent refined oil, a hydrogenation refined oil, a dewaxed oil and a clay treated oil.

Claim 7 (New): The method for producing a mechanical part according to claim 5, wherein the lubricating base oil is at least one synthetic oil selected from the group consisting

of a poly( $\alpha$ -olefin), an olefin copolymer, a branched polyolefin, polyisobutylene, polypropylene, a hydrogenated product thereof, an alkylbenzene and an alkylnaphthalene.

Claim 8 (New): The method for producing a mechanical part according to claim 1, wherein a pour point of the lubricating base oil is  $-10^{\circ}\text{C}$  or lower.

Claim 9 (New): The method for producing a mechanical part according to claim 1, wherein the high basic Ca sulfonate is at least one selected from the group consisting of an aromatic petroleum sulfonic acid, an alkylsulfonic acid, an arylsulfonic acid and an alkylarylsulfonic acid.

Claim 10 (New): The method for producing a mechanical part according to claim 1, wherein the high basic Ca sulfonate is a Ca salt of at least one selected from the group of sulfonic acids consisting of dodecylbenzenesulfonic acid, dilaurylcetylbenzenesulfonic acid, a paraffin wax-substituted benzenesulfonic acid, a polyolefin-substituted benzenesulfonic acid, a polyisobutylene-substituted benzenesulfonic acid and naphthalenesulfonic acid.

Claim 11 (New): The method for producing a mechanical part according to claim 1, wherein a total base value of the high basic Ca sulfonate is at least 50 mg KOH/g when measured by a perchloric acid method.

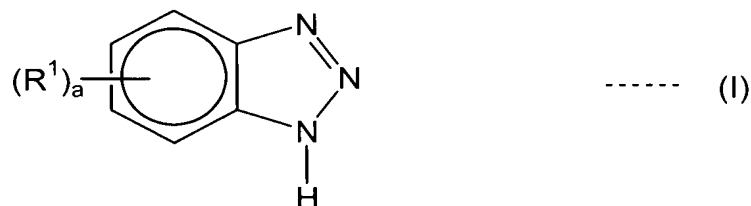
Claim 12 (New): The method for producing a mechanical part according to claim 2, wherein the neutral Ba sulfonate is a Ba salt of at least one selected from the group of sulfonic acids consisting of dodecylbenzenesulfonic acid, dilaurylcetylbenzenesulfonic acid,

a paraffin wax-substituted benzenesulfonic acid, a polyolefin-substituted benzenesulfonic acid, a polyisobutylene-substituted benzenesulfonic acid and naphthalenesulfonic acid.

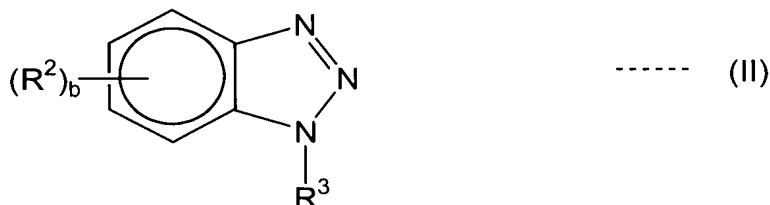
Claim 13 (New): The method for producing a mechanical part according to claim 2, wherein a total base value of the neutral Ba sulfonate is about 0 mg KOH/g when measured by a perchloric acid method.

Claim 14 (New): The method for producing a mechanical part according to claim 2, wherein the polyhydric alcohol of the fatty acid ester of a polyhydric alcohol is at least one selected from the group consisting of glycerin, trimethylolethane, trimethylolpropane, erythritol, pentaerythritol, arabitol, sorbitol and sorbitan, and the fatty acid of the fatty acid ester of a polyhydric alcohol has 12 to 24 carbon atoms.

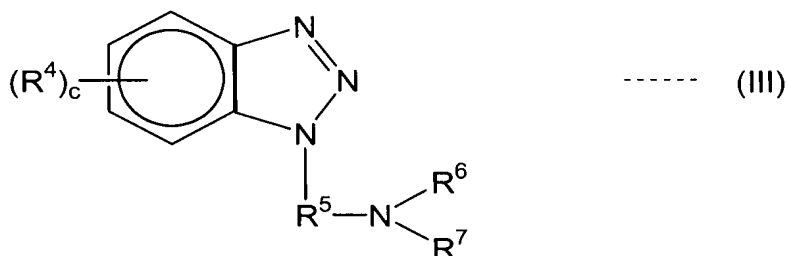
Claim 15 (New): The method for producing a mechanical part according to claim 3, wherein the benzotriazole is at least one selected from the group consisting of benzotriazole, an alkylbenzotriazole represented by formula (I), an N-(alkyl)alkylbenzotriazole represented by formula (II), and an N-(alkyl)aminoalkylbenzotriazole represented by formula (III):



wherein R<sup>1</sup> represents an alkyl group having 1 to 4 carbon atoms and a is an integer of 0 to 4;



wherein  $R^2$  and  $R^3$  are same or different and each represent an alkyl group having 1 to 4 carbon atoms and  $b$  is an integer of 0 to 4;

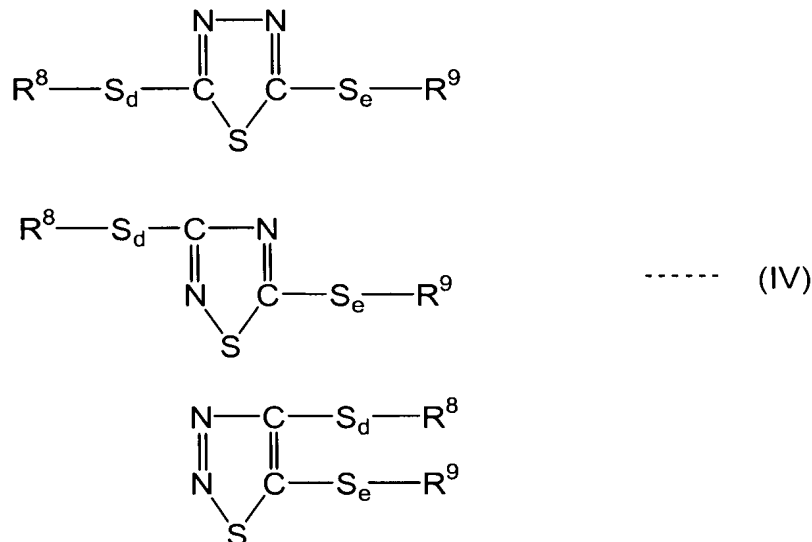


wherein  $R^4$  represents an alkyl group having 1 to 4 carbon atoms,  $R^5$  represents a methylene group, or an ethylene group,  $R^6$  and  $R^7$  are same or different and each represent a hydrogen atom or an alkyl group having 1 to 12 carbon atoms and  $c$  is an integer of 0 to 4.

Claim 16 (New): The method for producing a mechanical part according to claim 3, wherein the benzotriazole is at least one selected from the group consisting of benzotriazole, N-methylbenzotriazole, and N-dioctylaminomethyl-1,2,3-benzotriazole.

Claim 17 (New): The method for producing a mechanical part according to claim 3, wherein the thiadiazole is at least one selected from the group consisting of a 1,3,4-

thiadiazole, a 1,2,4-thiadiazole, and a 1,4,5-thiadiazole represented by the following formulas (IV):



wherein  $\text{R}^8$  and  $\text{R}^9$  each represent a hydrogen atom or an alkyl group having 1 to 20 carbon atoms, and d and e are each an integer of 0 to 8.

Claim 18 (New): The method for producing a mechanical part according to claim 4, wherein the anti-oxidizing agent is at least one selected from the group consisting of a phenolic anti-oxidizing agent, an amino anti-oxidizing agent and a sulfur anti-oxidizing agent.

Claim 19 (New): The method for producing a mechanical part according to claim 1, wherein a kinematic viscosity of the lubricating oil is in the range from 2 to 200  $\text{mm}^2/\text{s}$  at 40°C.

Claim 20 (New): The method for producing a mechanical part according to claim 1, wherein the lubricating oil applied during sizing further comprises at least one additive selected from the group of additives consisting of a phosphorous or sulfur containing extreme-pressure agent, an antifoaming agent, a friction controlling agent, a cleaning dispersant, a viscosity index improver and a thickener.